

A Green Light for Postfire Grazing

KIRK DAVIES (D2018-1)

Two Agricultural Research Service scientists have found that the Wyoming big sagebrush steppe plant community can accommodate grazing cattle and still make a successful comeback after a fire, as long as producers carefully monitor their livestock.

“Managers have typically kept grazing cows out of the burned area for two seasons after a fire,” says rangeland scientist Jon Bates, who works at the Eastern Oregon Agricultural Research Center (EOARC) in Burns, Oregon. “But our research shows that, at least for rangeland that’s in good condition, there’s no real difference in plant recovery when grazing begins soon after a fire.”

In the big sagebrush steppe, periodic wildfires are part of the vegetation community’s historical disturbance regime, and land managers mimic those dynamics with managed fires. Bates teamed with EOARC rangeland scientist Kirk Davies to see how vegetation recovery differed between plant communities where grazing was permitted after a fire and where it was not allowed.

The scientists set up thirty 5-acre trial plots in the Northern Great Basin Experimental Range in eastern Oregon, which is dominated by Wyoming big sagebrush and perennial bunchgrasses. They burned most of the plots in the fall of 2002, which killed almost all of the Wyoming sagebrush, and then studied how different grazing management systems affected the recovery of the forbs and perennials.



Cattle grazing on sagebrush in southeastern Oregon near Little Juniper Mountain.

Five “summer” plots were grazed in 2003 and 2004, beginning the first summer after the fire and when grasses and forbs had already completed their growth for the season and were mostly dormant. Five other summer plots were grazed in the summers of 2004 and 2005, beginning 2 years after the plots were burned.

“Spring” plots were grazed in early to mid-May, before grasses began their reproductive development. Five of these plots were grazed in 2004 and 2005 at the beginning of the second growing season after the 2002 fire. Another five were only grazed in 2005, 3 years after they were burned, which replicates many current postfire grazing strategies.

Five plots were burned but not grazed, and the remaining five plots were not burned or grazed.

Cattle that grazed in the burned plots were removed after they had eaten 40 to 50 percent of the avail-

able forage. This grazing level is considered to be moderate or slightly higher than moderate for big sagebrush steppe.

The scientists gathered data on herbaceous canopy cover, density, annual yield, and perennial grass seed yield on all 30 plots. They found that postfire plant recovery did not differ significantly between grazed and ungrazed plots. In addition, all the burned plots had more herb cover, herb standing crop, annual yield, and grass seed yield by the second or third year after the fire than the unburned control plots.—By **Ann Perry**, ARS.

This research is part of Pasture, Forage, and Range Land Systems (#215), an ARS national program described at www.nps.ars.usda.gov.

*Jonathan D. Bates and Kirk W. Davies are with the USDA-ARS Eastern Oregon Agricultural Research Center, 67826-A Hwy. 205, Burns, OR 97720; (541) 573-8932 [Bates], (541) 573-4074 [Davies], jon.bates@ars.usda.gov, kirk.davies@ars.usda.gov. **

